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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/530,023	04/21/2000	RICHARD ALLAN TUCK	670-1002	2181

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EXAMINER

WILLIAMS, JOSEPH L

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/530,023

Applicant(s)

TUCK ET AL.

Examiner

Joseph L. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 9-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-8 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the product claims have been specified to be made by the steps of claim 1. This is not found persuasive because claims 9-18 would be treated as product by process claims, and therefore the method by which the final product was made is not afforded patentable weight (see MPEP 2106).

The requirement is still deemed proper and is therefore made FINAL.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Song et al. (US 5,696,385).

Regarding claim 1, Song ('385) teaches in figure 15 and in column 3, line 57 through column 5, line 39, a method of manufacturing a field electron emission cathode having at least one cathode electrode which comprises a field emitting layer between first and second conducting layers and at least one gate electrode which overlies the cathode electrode and comprises an insulating layer and a third conducting layer (305), characterized in that the method comprises the steps of:

a. depositing on an insulating substrate to form by low resolution means, a sequence of the first conducting layer, field emitting layer and second conducting layer to form the at least one cathode electrode; b. depositing on the cathode electrode to form by low resolution means, a sequence of the insulating layer and third conducting layer, to form the at least one gate electrode; c. coating the structure thus formed with a photoresist layer; d. exposing the photoresist layer by high resolution means to form at least one group of emitting cells, the or each the group being located in an area of overlap between one the cathode electrode and one the gate electrode; e. etching sequentially the third conducting layer, the insulating layer and the second conducting layer to expose the field emitting layer in the cells; and f. removing remaining areas of the photoresist layer.

Regarding claim 2, Song ('385) teaches cathode is a cathode array, the cathode electrode and the gate electrode comprise respectively cathode addressing tracks and

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gate addressing tracks, which tracks are arranged in addressable rows and columns, and step d. includes forming a pattern of the groups of emitting cells.

Regarding claim 3, Song ('385) teaches at least one of or all of the cathode addressing tracks addresses a plurality of rows or columns of cells.

Regarding claim 6, Song ('385) teaches the step of forming at least one of the conducting layers by a means other than vacuum evaporation or sputtering.

Regarding claim 7, Song ('385) teaches the field emitting layer comprises a layer of broad area field emitter material.

Regarding claim 8, Song ('385) teaches the further steps of depositing sequentially a second insulating layer and fourth conducting layer onto the cathode after completion of steps a. to f., to form a focus grid.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US 5,695,385), of record, in view of Stansbury (US 5,634,585).

Regarding claim 4, Song ('385) teaches all of the claimed limitations except for the formation of fiducial marks.

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Further regarding claim 4, Stansbury ('585) teaches the use of fiducial marks for the purpose of alignment.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the fiducial marks of Stansbury in the display of Song for the purpose of alignment of the display.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US 5,695,385), of record, in view of Potter (US 5,628,663).

Regarding claim 5, Song ('385) discloses all of the claimed limitations except for the conductors being applied by liquid bright material or electroless plating.

Further regarding claim 5, Potter ('663) teaches in column 14, lines 8-17, conductors being applied by electroless plating for the purpose of improving the performance of the display.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the electroless plating method of Potter in the display of Song for the purpose of improving the performance of the display.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Williams whose telephone number is (703) 305-1670. The examiner can normally be reached on M-F (6:30 AM-3:00 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Joseph Williams

Examiner
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